The role of anti-mullerian hormone (AMH) in assessing ovarian reserve.

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Public Summary:

Scientific Abstract:
CONTEXT: Anti-mullerian hormone (AMH) has been suggested as a marker for the quantity of oocytes remaining within the ovaries (ovarian reserve). It was shown to correlate with antral follicle counts (AFC), outcomes from ovarian stimulation, and onset of menopause. Thus, AMH was previously considered to be the ideal marker of ovarian reserve because it is exclusively produced by granulosa cells and is the only marker that was thought to be stable throughout the menstrual cycle. However, recent studies demonstrate fluctuations in AMH levels during the menstrual cycles, questioning the utility of AMH as a marker of oocyte quantity. OBJECTIVE: We report the case of a 32-yr-old Gravida 0 woman with idiopathic hypogonadotropic hypogonadism who presented for fertility treatment with unstable AMH levels. PATIENT AND METHODS: The patient's initial FSH and LH levels were both below 1.0 mIU/ml. Estradiol was 28 pg/ml. Her initial AMH and AFC were 0.20 ng/ml and 0, respectively. She underwent three cycles of fertility treatment. RESULTS: During the 16-wk course of treatment with human menopausal gonadotropins, normal follicular development was observed. Both AMH and AFC gradually increased during treatment and peaked at 1.26 ng/ml and 6, respectively. On the third cycle of treatment, she successfully conceived. CONCLUSION: In the case of idiopathic hypogonadotropic hypogonadism, AMH concentration increases because human menopausal gonadotropin stimulates the growth of FSH-dependent follicles. Thus, AMH has limitations because it only reflects the growing follicular pool that is responsive to gonadotropins. Therefore, AMH may not be solely reflective of the underlying primordial pool.